CompuServe Information Service

TODAY

JULY 1981 PRICE $2.50

CB: America On-Line

Bank-at-Home Debuts

CompuServe On QUBE

The Electronic Washington Post

Better Homes Offers Food Information

And More...

Premiere Issue

Radio Shack Made the TRS-80® Color Computer Even Better!

At $399*, it's no wonder the 4K TRS-80 Color Computer is ideal for beginners. Now there's a TRS-80 Color Computer designed for more advanced applications, too.

TRS-80 Extended Color BASIC Computer. This high-performance computer includes a 16K ROM Extended BASIC with advanced graphics, eight brilliant colors, and sound for an unprecedented low price! You can draw fine lines, circles, rectangles, boxes and more with *easy-to-use one-line commands.* Four graphic modes with two color sets allow up to 49,152 programmable screen points (pixels). There's 225 separate tones for music or sound effects, too. All this on a 16K RAM machine (including video memory) loaded with the dynamic features a serious programmer demands. You get a 32-cpl x 16-line screen, multi-character variable names (two significant), editing, tracing, user-definable keys, 255-character string arrays, floating point 9-digit accuracy, and even machine language routines.

Priced at Only $599, the TRS-80 Extended Color BASIC Computer is useful, entertaining and educational. Yet using it can be as simple as plugging in one of Radio Shack's instant-loading Program Paks. The computer attaches to your TV, or our own $399 TRS-80 Color Video Receiver. For just $24.95, you can add a pair of joysticks which add flexibility to games and video displays. A built-in serial interface lets you attach a printer or a modem. A pair of tutorial, Extended Color BASIC instruction manuals are included, as well.

More Good News. Extended Color BASIC is also available as an upgrade kit ($99) for your 4K Color Computer (16K RAM required — $119). There's a modest installation charge for each kit.

New TRS-80 VIDEOTEX Software (with the modem shown below) offers quick, affordable access to various information and data services. The CompuServe® Information Service gets you local, national and international news, weather and sports from major newspapers, like The New York Times and The Washington Post, plus the Associated Press News Service; info on stocks and bonds; educational reference service; nationwide Electronic Mail and much more! The Dow Jones® Information Services provides stock exchange quotes — as recent as 15 minutes — plus feature selections from The Wall Street Journal and Barron's.

Only $29.95 Buys You VIDEOTEX Software including a free hour on both CompuServe and Dow Jones. Come see the new TRS-80 Color Computer, its programs and accessories, at your nearby Radio Shack today!

Radio Shack®

The biggest name in little computers™

A DIVISION OF TANDY CORPORATION

6100 STORES AND DEALERS, 140 COMPUTER CENTERS AND 135 SERVICE CENTERS NATIONWIDE

NEW

A Low-Cost, Direct-Connect Modem. A convenient alternative to an acoustic coupler. The TRS-80 Modem I lets you enter the world of microcomputer communication for only $149. Cable extra.

Specifications. Low-Power CMOS Circuitry: Full duplex 300 baud, 103 compatible ANS/ORIG. Sensitivity: – 48 dB/ – 43 dB. Connectors: DB25/4-pin DIN; includes interface for Model I cassette port. FCC approved.

*Retail prices may vary at individual stores and dealers.

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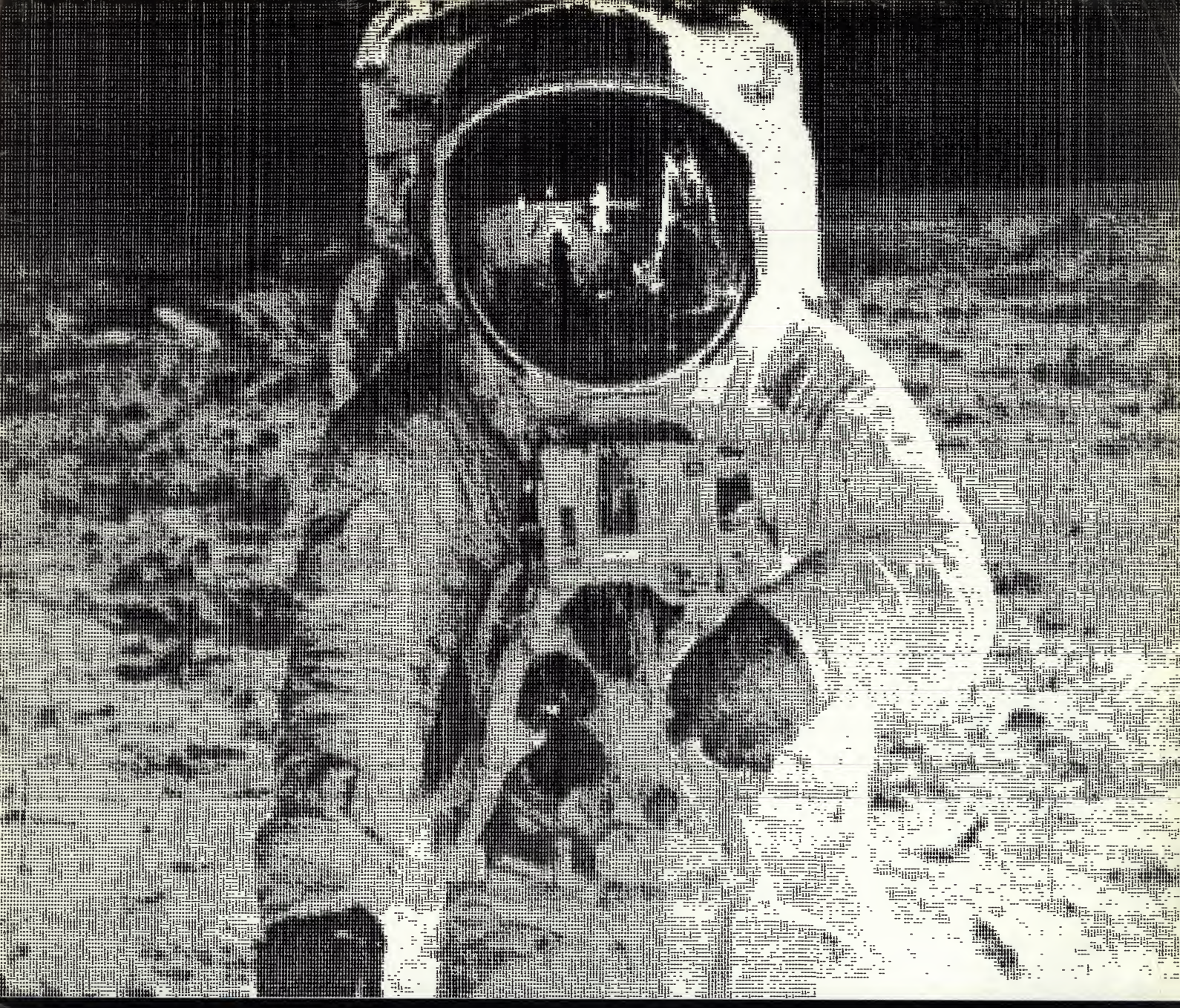

OUT OF THIS WORLD

CompuServe's Line Printer Art Gallery introduces you to a whole new world of computer graphics. Meet Neil Armstrong on the moon. And his fellow space-traveller, Star Trek's Mr. Spock. For earthbound art lovers, there's Albert Einstein and Mona Lisa. Plus a host of other subjects, ranging from kittens to mountain climbers to seasonal favorites. Perfect as gifts, decorations, prizes and murals, they're available now from CompuServe, for prices ranging from $4.30 to $19.50 and sizes up to 8′4″ x 8′8″. So browse through our Line Printer Art Gallery (new works added frequently) and start your collection today.

To order enter Personal Computing, main menu item 9, and type R ARTGAL. Prices include postage and handling.

CompuServe

5000 Arlington Centre Boulevard
Columbus, Ohio 43220

TODAY

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The Cover:
Photograph courtesy of Radio Shack®

Welcome to TODAY

TODAY Magazine July 1981

Published by CompuServe Incorporated, An H&R Block Company.

Editorial and Advertising Offices
Information Service Division
5000 Arlington Centre Blvd.
Columbus, Ohio 43220.

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Third Class Postage, Permit No. 1476 Paid at Columbus, Ohio 43220.

Dear Reader,
Welcome to TODAY! TODAY magazine is published for customers of the CompuServe Information Service and is intended to help them use and enjoy the service to the fullest extent.

TODAY will provide news and general information about current service offerings and will keep you informed about "coming attractions." Features on new and existing products, customers, information providers and new services will be offered regularly. We'll also tell you about new technology as it relates to the information service and will keep you abreast of our rapid network expansion.

We have opened TODAY to advertisers, and several organizations chose to join us in our premiere issue. If you would like information on advertising rates, fill out the card enclosed in this magazine and send it to us, or if you are already a customer, send us a message through FEEDBK (main menu item 5, CompuServe User Information) at no cost to you.

Another card is enclosed asking our customers for changed addresses and our non-customers if they would like to receive the next issue of TODAY (CompuServe customers will automatically receive each issue of TODAY).

You'll notice in several stories in TODAY that we make reference to the location of various products and services on the CompuServe Information Service. For example, in our story on Better Homes & Gardens, we tell you that you can find BH&G by accessing main menu item 7, Home Information. While our main menu and subject index (the index is printed in the center of the magazine) were the latest at the time of this printing, the constant addition of new subjects sometimes causes items to be relocated within the information service.

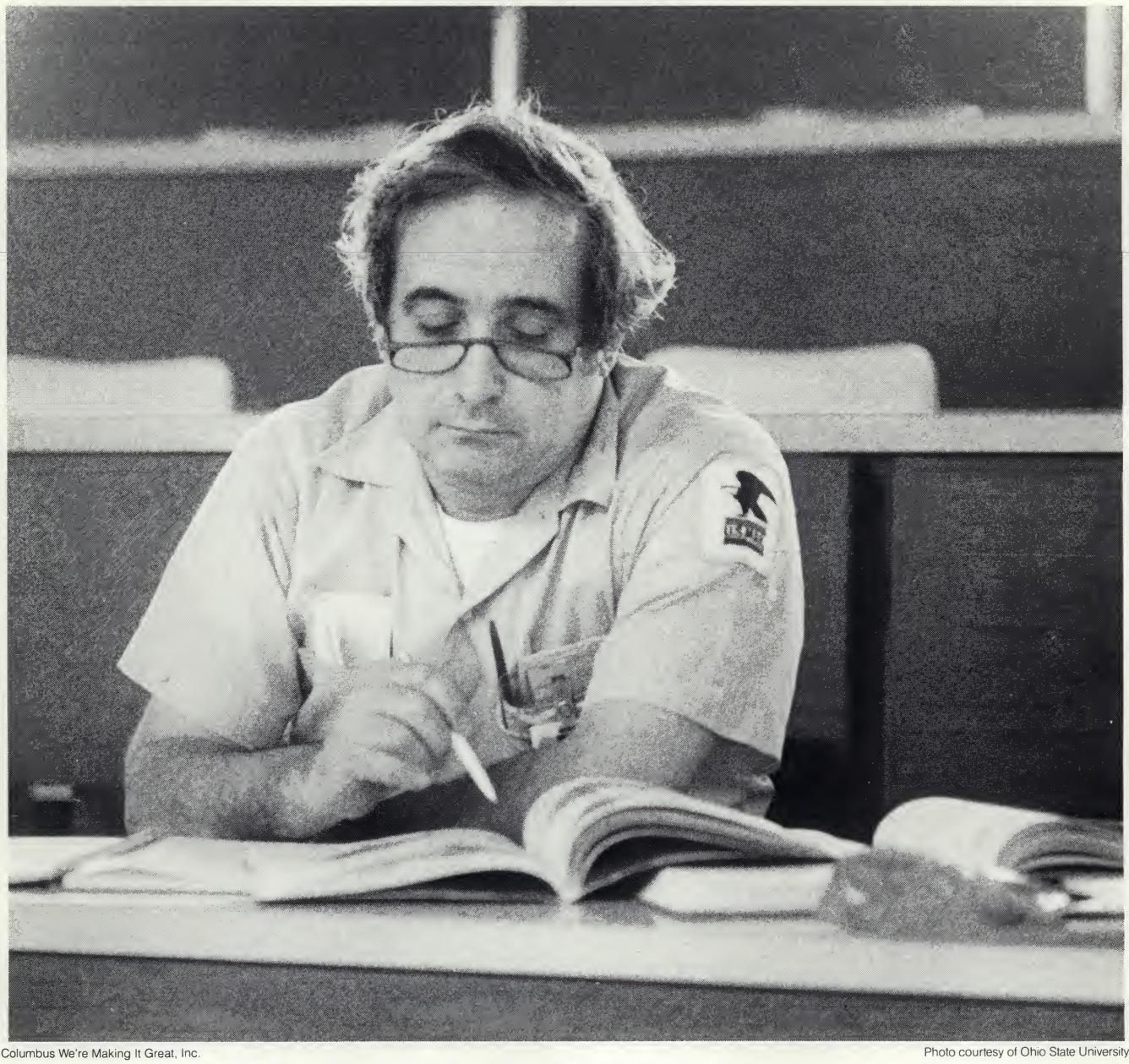
If you have trouble finding an item as described in the magazine, access the subject index on the information service to find the new location. After all, that's one of the advantages of electronic information over printed information.

While you're at it, we'd like to know what you think of our magazine. Send us your opinions through FEEDBK.

Remember, the CompuServe Information Service is sold at Radio Shack stores across the country. Visit the store nearest you.

The CompuServe Information Service is the world's largest personal computing service of its kind, and we are pleased to have you as a customer. We hope you enjoy TODAY magazine. Good things are in store.

John E. Meier
Vice President and General Manager
Information Service Division



Columbus We're Making It Great, Inc.

Photo courtesy of Ohio State University.

In Columbus, A Man Of Letters Can Go On To Become A Man Of Letters.

A lot of people in Columbus don't go home after work.

They go to school.

They're students in the area's many continuing education programs. Working men and women who are willing to work even harder two or three nights a week to further their careers. Or to change them.

It's not surprising that Columbus residents would take time to take classes, because Columbus is one of the country's leading educational centers. Within the area are eight colleges and universities. And scores of trade, technical and professional schools.

The educational excellence of Columbus is not limited solely to higher learning. The area's elementary and secondary schools are among the best not just in the state, but in the nation.

Columbus is a leader in research as well. Battelle Memorial Institute, Chemical Abstracts and Ohio State University are renowned as three of the world's foremost facilities for research and testing in science and technology, education, business and industry.

Which all goes to show what we've known all along—Columbus is a pretty smart place to live.★

COLUMBUS

WE'RE MAKING IT GREAT!

12,000 CUSTOMERS AND GROWING

On May 5, CompuServe passed the 10,000 customer mark of active subscribers to the CompuServe Information Service.

The 10,000 figure reflected the actual number of paying customers and did not include demonstration accounts, media accounts or employees. That number has grown to more than 12,000, with demonstration accounts, media accounts and employee usage pushing the actual number of users much higher.

The geographic distribution of customers shows high concentrations in and around New York City and the eastern seaboard, the "Silicon Valley" area of California and the areas around Los Angeles, populous areas of the South and industrial cities of the Midwest.

The CompuServe Information Service provides information and services to owners of personal computers and computer terminals in the main subject areas of news, finance, entertainment, home information, electronic mail and personal computing. Customers access CompuServe by a local telephone call in more than 260 U.S. cities.

Specific offerings on CompuServe include the latest news from a national news wire and major newspapers; family information including food recipes, nutrition, meal planning, home improvement and self development; financial information such as current and historical data on securities, commodities pricing, financial analysis and home banking; entertainment including multi-player games and simulations; electronic mail for message sending and retrieving; and personal computing services which include programming languages, software purchases and technical documentation.

CNS OFFERS LATEST COMMODITIES NEWS, PRICES

Commodity News Services, Inc. (CNS), a leader in the commodity news reporting business since 1953, now offers the latest news and prices to home and business computer owners using the CompuServe Information Service. (Access main menu item 2, Finance or Go CNS-1).

Information from CNS includes prices and basic news stories incorporating market commentary and statistics. Information is categorized by commodity or area of interest, and includes coverage of grain, livestock, metals, energy, financial instruments and general economic and international news. All information is updated continuously throughout the day.

CNS operates instant quotation video display terminals that track and continuously update commodity futures markets, 17 different high-speed commodity newswires and separate news video display terminals on livestock, grain and cotton. Through its recently acquired subsidiary, American Quotation Systems, Inc. (AQS), CNS serves the grain industry with instant commodity market quotations and precision reporting of related news by video display. In addition, CNS and United Press International jointly operate an international newswire service, UNICOM News, headquartered in London, which reports world-wide economic and commodity news. UNIQUOTE, which is a service offered by UNICOM, provides subscribers with access to international commodity futures prices.

CNS is a wholly-owned subsidiary of Knight-Ridder Newspaper, Inc.

COLLEGE BOARD GOES ON-LINE

The College Board is now a provider of educational information on the CompuServe Information Service. (Access main menu item 8, Education, or Go TCB-1).

The College Board, a educational association of more than 2,500 secondary schools, colleges and educational association, provides guidance and admissions information to college-bound students and adults nationwide, and helps schools and colleges respond to the eduational needs of students.

Owners of personal computers and computer terminals who subscribe to CompuServe can receive information from The College Board on choosing a college, the types of financial aid available to students and adults, preparing for the Scholastic Aptitude Test and adult education.

Future services from The College Board could include exercises related to the building of decision-making skills and a schedule detailing the cycle of activities associated with college selection, application and admission.

CompuServe subscribers can access The College Board information for the standard fee of $5 per hour weekday evenings, all day weekends and holidays. Weekday daytime access is also available.

MICROQUOTE MEANS BUSINESS

You now have a window on Wall Street with the MicroQuote securities database.

Trading statistics and descriptive information on more than 32,000 stocks, bonds and options are now available in an easy-to-use database specially designed for personal computer users.

The database is called MicroQuote, and it is available exclusively thru the CompuServe Information Service (Access main menu item 2, Finance, to use MicroQuote and to see the MicroQuote demonstration program).

MicroQuote provides fast access to a variety of information on securities traded on exchanges and over-the-counter.

MicroQuote is updated daily, and historical prices, volumes and dividends are available back to Dec. 31, 1973.

Specific information available thru MicroQuote includes current and historical prices (high, low and closing), volumes, dividends and descriptive data such as earnings per share, ratings, shares outstanding, etc.

Information on bonds includes yields, maturity dates and Moody's ratings. Options information includes exercise prices, expiration dates and underlying stock prices.

MicroQuote allows a user to search for securities by using CUSIP (Committee on Uniform Security Identification Procedures) numbers, "ticker" symbols or by issuer name.

MicroQuote also searches for information between specific starting and ending dates and will report information for daily, weekly or monthly time periods.

The cost to use the MicroQuote database comprises "connect time" charges (the amount of time you are using the CompuServe Information Service at $5 per hour), a database access fee of $1 and transaction fees based on the program utilized and the amount of information requested.

Daily, weekly and monthly price and dividend sets cost 5, 10 and 15 cents respectively for each set (a set includes the date, volume, high/ask, low/bid and close). Examining an issue in detail costs $1.25 per issue. Descriptive information for a specified time frame also costs $1.25 for each period up to 261 days.

Lists of ticker symbols and issuer names cost 25 cents for increments of 25.

To run a particular MicroQuote program, type the name of the program when prompted with PROGRAM:.

When a program prompts ISSUE: it is expecting a ticker symbol or cusip number. If you do not know the ticker symbol or cusip number for a security, use the CUSIP program before you run any of the other programs.

The CUSIP program is used to find a ticker symbol or cusip number for a particular security. It can also be used to list all of the issues for an issuer (debt, equities, options) that are in the database.

Other MicroQuote programs include:

PRICE—The PRICE program lists daily, weekly or monthly trading statistics or dividends for an issue. All listed prices and dividends are adjusted for stock splits and stock distributions.

In addition to price sets, distribution data includes the date, rate, type, ex-date, record date, and payment date.

EXAMIN — The EXAMIN program lists descriptive data about an issue. It lists such items as Standard and Poor rating, shares outstanding, beta factor, latest bid, pricing and dividend history, Moody's rating, bond rate, yield, maturity date or open interest, exercise price, underlying issue price etc.

MKTREP-The MKTREP program creates listings of stocks which pass through 19 predefined screens detecting abnormal price or volume movement.

STATS — The STATS program gives descriptive statistics on an issue over a specified time period. The high, low, close, high close, low close, volume, and the mean and standard deviation are reported.

QPORT—The QPORT program provides a quick means for preparing your own portfolio valuation reports. The issue, number of units and acquisition costs per unit is entered. QPORT will then produce a position report based on the acquisition costs entered and the current prices as of the valuation date selected.

QUOTES — The QUOTES program provides pricing information for a group of securities for a single date. Prices are adjusted for stock splits and dividends. The items available are TICKER SYMBOL, CLOSE, VOLUME, HIGH, LOW, and CUSIP number. You can create a file of ticker symbols or cusip numbers to be used as input to QUOTES.

MQDATA — MQDATA is a MicroQuote program especially designed for users who wish to transfer data to their own microcomputers. Output from MQDATA can be directed to a file which can be later transferred to your microcomputer via FILTRN or subsequently typed out by specifying TYPE FILENAME.EXT at the PROGRAM: Prompt.

GOT YOUR EARS ON?

CompuServe's CB Simulator turns your personal computer into a good buddy.

by Richard A. Baker

(19,SPACE GHOST) ANYBODY ELSE AROUND?
(19,GGG) HELLO
(19,SPACE GHOST) HI GGG WHAT'S NEW WITH YOU
(19,GGG) ITS HOT
(19,SPACE GHOST) WHERE???????????????
(19,GGG) ARIZONA
(19,SPACE GHOST) WHERE IN ARIZ?
(19,GG) PHX
(19,FUNNYBUG) HI!
(19,SPACE GHOST) MY MOM HAS A FRIEND IN AURORA
(19,GGG) WHAT?
(19,FUNNYBUG) EXIT
(19,SPACE GHOST) MY MOM HAS A FRIEND IN AURORA
(19,GGG) COLORADO?
(19,HOT ROD) HI FUNNY BUG
(19,SPACE GHOST) NO NO
(19,SPACE GHOST) ARIZ
(19,GGG) WHERE ARE YOU?
(19,SPACE GHOST) IM IN KETTERING, OHIO
(19,SPACE GHOST) NEAR DAYTON
(19,GGG) WEATHER GOOD?
(19,SPACE GHOST) NOT REALLY
(19,SPACE GHOST) I SAW THE SUN ONCE IN THE LAST FEW WEEKS
(19,CHRISDOS) HELLO ALL...

(19,SLOWPOKE) ANYONE FROM FLAGSTAFF?
(19,SPACE GHOST) HI CHRIS
(19,CHRISDOS) HAS ANYONE SEEN MORK ??
(19,CHRISDOS) HI S G
(19,SPACE GHOST) HEY GGG?
(19,SLOWPOKE) ?
(19,SPACE GHOST) THAT FRIEND LIVES IN PEORIA, NOT AURORA
(19,FUNNYBUG) EXIT
(19,SLOWPOKE) BYE

No, what you just read is not a secret coded message from the latest James Bond Movie. You just read a typical (?) exchange among people using one of the most interesting communications media in the country: CompuServe's CB Simulator.

The CB Simulator is patterned after the popular citizen band radio with its instantaneous, multi-channel communications capability. It also makes use of characteristics which have been the subject of many a trucker's tune and country music song —handles and CB jargon.

On CB you are identified by your "handle," much as truckers and travelers who use handles as forms of identification. Most people choose handles which say something about themselves.

Take a look at some of the better known handles on CompuServe CB: Tiger Lily, $$Tax Man$$, Robot, Ms. Rainbo, Beeper, Bozo the Clone, Captain Video, Cookie Monster, Lady Frog, Rubber Duck, Tootsie Roll, Mork.

Wonder what these folks are trying to say?

CB offers 36 "channels" to use. CBers are automatically put on channel 19 when first "logging on" or accessing the CB program but can easily change to other channels and back to 19.

Your terminal or personal computer keyboard becomes your microphone, and everything you type, when followed by a carriage return or "enter," is seen (or "heard") by other CBers on the same channel.

The CB phenomenon has grown into more than just a way to communicate. CompuServe customers who use CB have become part of one of the most unique clubs in the country and have developed a comradery unlike anything seen before.

Avid CBers have become good friends with people in other parts of the country. Topics can range from idle chitchat to the events shaping the world today.

Octalpus, a CB regular, gives some good advice:

"Many people on CB are regulars who know each other (from CB). This may give you the feeling that you have crashed someone else's party when you see your first CB conversation.

"Don't worry, though. Almost everyone on CB is very friendly and will try to make you feel welcome.

"If you interrupt an ongoing conversation on a 'heavy' subject, make allowance for the fact that the participants may want to complete their exchange before greeting you.

"It is by and large true that the same rules of politeness apply on CB as among considerate people talking face to face.

"If by some chance you don't like what you see at first, keep in mind that there are as many kinds of people and conversations on CB as there are in the rest of the world. Don't jump to any conclusions from your first few minutes. CB is merely a medium, albeit a new and exciting one, and its nature is whatever YOU will make it."

CBers will find many commands helpful during an average CB session.

The /TUNE command changes the channel to which you are tuned. Your messages will appear on the channel you specified, and you will be able to read the messages being sent by others using that channel.

The /MONITOR command allows you to follow the conversations on one or more channels. On a busy evening, following several conversations can keep you on your toes.

The /STATUS command will tell you the number of people using channels at the time you issue the command. You can monitor the heavy traffic areas using this command.

CB also offers a /SCRAMBLE command which allows you to carry on a private conversation with another CBer by having your messages scrambled. A special code that you and the other person decide upon will unscramble the message. Other people on the channel will see the scrambled version of the message, while you and the person with whom you are communicating will read the unscrambled message.

You can even play a game of chance with fellow CBers using the /ROLL command.

If you haven't tried CB, by all means do so. You'll find it under main menu item 3, Entertainment.

While you're at it, say "hi" to Ms. Rainbo, and Octalpus, and Mr. RNA, and Sweet Thing ...

Be Cool

Summertime . . . and the livin' is ADVENTURE-ous. Our dragon may be breathing fire, but you'll be blissfully cool in this cotton/polyester blend T-shirt inspired by CompuServe's popular ADVENTURE computer game. (Just wear it in Colossal Cave and you'll see what we mean!) Small, medium, large and extra-large ADVENTURE players will find them coolly comfortable, in a sun-dazzling array of colors—navy, light blue, yellow, tan, kelly green and red. Cost is just $5.48 including postage and handling. To order, send us a message via FEEDBK (main menu item 5, CompuServe user information) stating your name, address, size, color and number of T-shirts desired. Order today . . . and be cool!

CompuServe

5000 Arlington Centre Boulevard, Columbus, Ohio 43220

BANK-AT-HOME DEBUTS IN KNOXVILLE

Knoxville, Tennessee may seem an unlikely spot for a revolution. Nestled in the Great Smoky Mountains, the city is home base for the University of Tennessee and just a stone's throw from the picturesque little resort town of Gatlinburg. Yet despite the outward signs of tranquility, Knoxville IS hosting a revolution. Bank-at-Home service is a reality at United American Bank in Knoxville (Access Electronic Banking under main menu item 2, Finance).

A joint venture of United American Service Corporation (UASC), a financial corporation with bank locations in Knoxville, Nashville, Memphis and Somerset, Kentucky; Radio Shack, a division of Tandy Corporation; and CompuServe, the electronic home banking service was introduced to Knoxville consumers on October 8, 1980. Some 400 of the bank's customers were selected for the initial phase, in which they will be able to use the bank's services in conjunction with a home computer. The venture marks the first commercial implementation of home computer banking in the U.S.

Products that the customer is already familiar with — a typewriter-like keyboard, a telephone and a television set — enable him or her to perform a variety of banking transactions without ever leaving home, say bank officials. The Bank-at-Home service potentially allows United American Bank customers to pay most of their bills, receive current information on their checking accounts, develop a computerized bookkeeping and tax record service, apply for loans, get national, international, financial and stock information and communicate messages from one computer user to another. The initial group of 400 customers pay monthly for the service, which can include the use of Radio Shack's TRS 80 Color Computer; a standard keyboard plugs into the customer's own television set and telephone.

UNITED AMERICAN BANK

Bank-at-Home utilizes the Radio Shack TRS80 Color Computer and the CompuServe Information Service.

The system, as the first of its kind, takes some getting used to on the part of consumers, and United American Bank takes that fact into consideration. Explains Thomas E. Sudman, UASC president, "We're releasing these programmed services in phases to allow our customers adequate opportunities to familiarize themselves with in-home computer use." He adds, "As their expertise and needs increase, the sophistication of the information services increases."

The first phase includes CompuServe's news and information network. The regular "shopping list" of features available to CompuServe customers is augmented by United American Bank's own news and daily information on savings and deposit rates.

The second phase will allow customers to pay most of their regular monthly bills by displaying that information on their television screen; customers simply choose who to pay, how much and when. And customers will be in direct communication with the bank, so their bills can be paid on the precise day requested.

The third phase, and one which bank officials report has been in demand for some time, will allow customers to see their checking transactions on the television screen. A current list of all checks and deposits which have reached the bank that day and a running balance of the account will be provided. Sudman calls the feature "a great plus for in-home money managers," because the checking account capability enables customers to have instant awareness of the status of their accounts.

By the end of 1981, Sudman says, the Bank-at-Home service will also include bookkeeping programs, loan preparation and electronic mail services.

by Patricia H. Carro

LOOKING TOWARD THE FUTURE

Futurists say today's technology will help us make an even better life for tomorrow.

by Patricia H. Carro

There are people whose job it is to spend eight hours a day, five days a week, just thinking about the future. They're called "futurists." They address themselves to such weighty questions as: What technologies will be in existence 20, 30 or 50 years from now? What problems will our civilization face? Which resources will be scarce, which plentiful?

The futurists also focus on lifestyles. Picture father, mother and 1.7 children ordering dinner from Max, the family robot, who also serves as housekeeper and guest-greeter. Picture traveling in motorized vehicles that whisk us to an office-in-the-sky in something less than 30 seconds. Better yet, picture not going to the office at all, but conducting all your work via your handy home computer. You may never leave your Basic Life-Sustaining Structure (re: house) for weeks at a time. Instead, mere button-pushing is adequate to perform the myriad of functions that comprise living in the futuristic society.

While the futurists eagerly delve to discover what lies ahead, the rest of us are filled with ... well, trepidation. Fear, even. And perhaps a healthy dose of curiosity.

The negative emotions, like fear and trepidation, tend to overshadow the positive aspects. Our lifestyles, we argue, are just fine as they are, thank you. Push-button this and computerized that are innovations this generation can do without, we say. I'll do my shopping in the grocery store, my banking at the nearest branch office. It's just more human, we say, than pushing buttons.

Perhaps. There IS something to be said for the grocery checkout clerk's smile and for the bank teller's parting, "Have a nice day!"

On the other hand, there is a great deal more to be said for convenience. Consider, for a moment, the strides we have made during just the past several decades, strides that have been greeted with cheers and thanks and such remarks as, "How did we ever get along without it?"

Banking is a good example. Your bank, for instance, most likely came into being with one downtown main office. Its customers went to that downtown office to transact any business, either professional or personal. Then came the movement to suburbia, as people fled cities to embrace the advantages of split-level homes with two-car garages and quarter acres of grass to mow. The banks promptly followed, establishing branch offices on major suburban streets. Your money was suddenly as close as the nearest streetcorner.

Still more changes were in the offing, all in quest of what had become a major watchword: Convenience. Suburban Americans came to rely increasingly on the automobile for transportation. The bank's answer? Drive-in windows, offering customers the opportunity to conduct their banking business without climbing out of their cars.

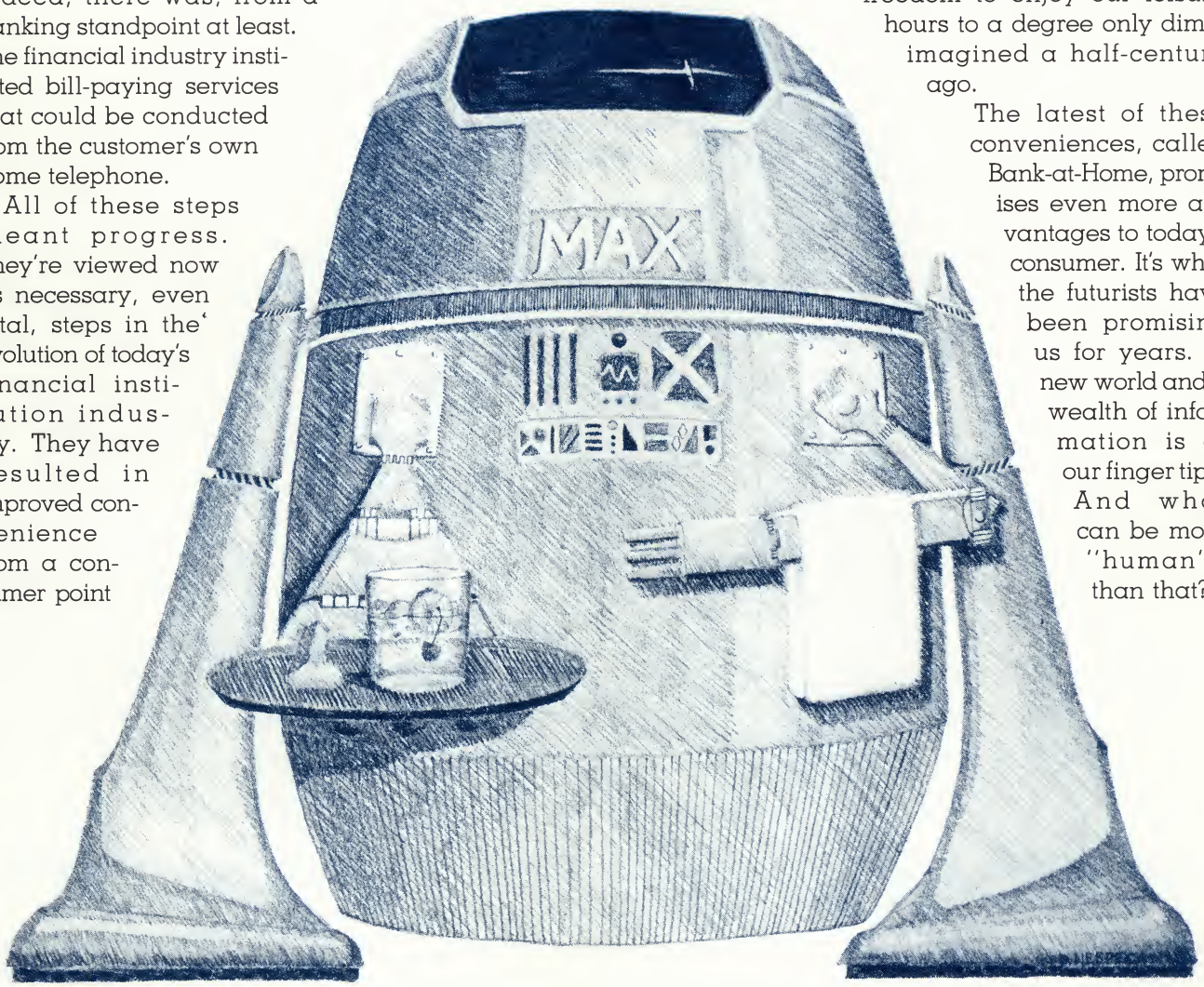
As society became increasingly mobile, another convenience was introduced: 24-hour banking. "Bankers' hours" were no longer sufficient to serve customers' diverse needs and so automatic tellers were installed, complete with code numbers and set of instructions for easy operation.

The '70s were a time of another kind of change, as people began the task of coping with dizzying demands on their time and also began worrying — more than absently, this time — about the cost of gasoline. All of this running to-and-fro, to pick up a suit at the dry cleaner's, to buy a couple of steaks at the butcher's, to cash a check at

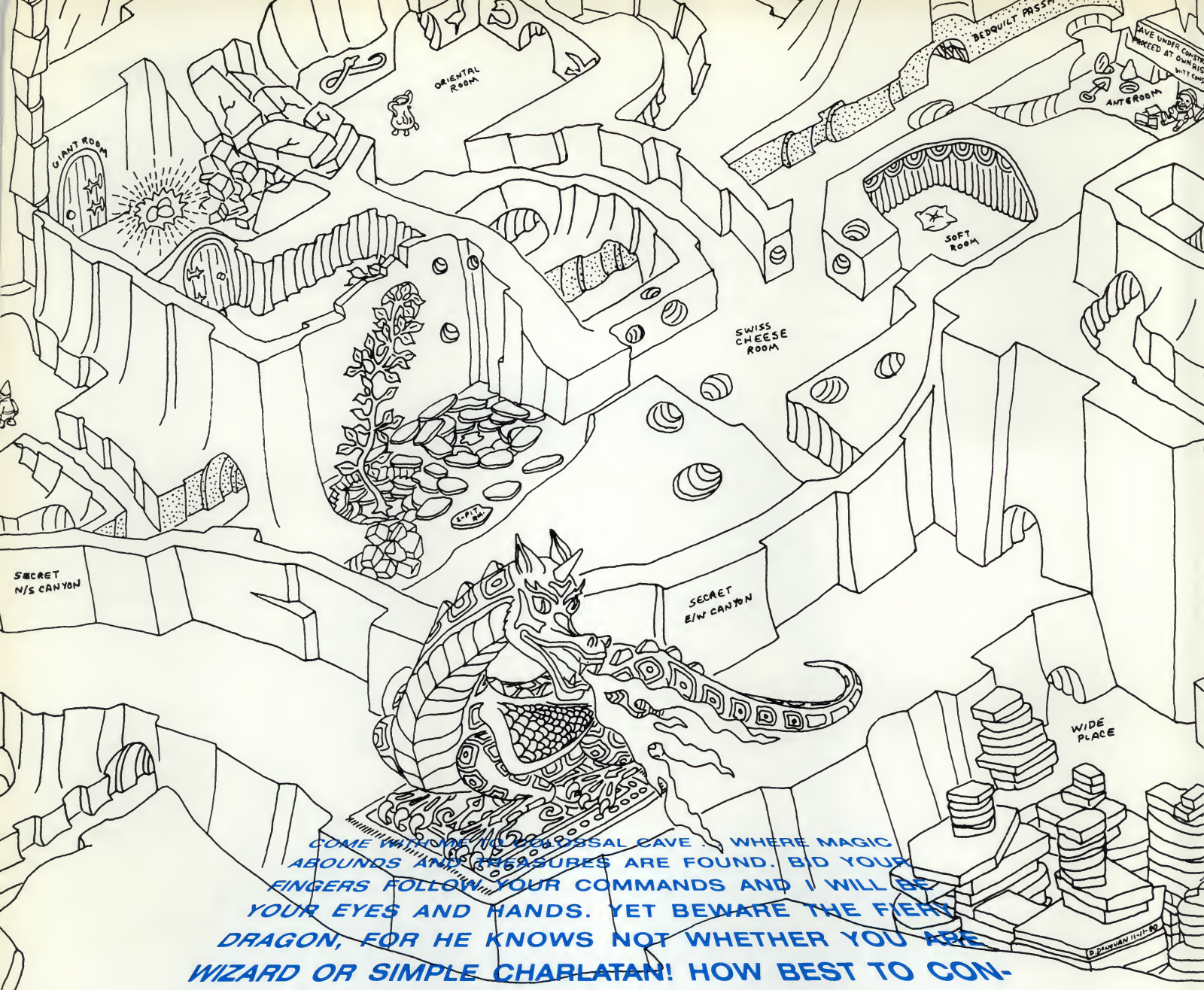
the bank, was beginning to take on real economic significance as gas prices escalated. Wasn't there a way to get these jobs accomplished without all that driving? Indeed, there was, from a banking standpoint at least. The financial industry instituted bill-paying services that could be conducted from the customer's own home telephone.

All of these steps meant progress. They're viewed now as necessary, even vital, steps in the evolution of today's financial institution industry. They have resulted in improved convenience from a consumer point of view. If any thing, these steps — from branch offices to 24-hour service — have made banking MORE human, for they have resulted in very substantial benefits that consumers would never have dreamed of in earlier times. Far from dehumanizing our society, these conveniences give us the freedom to enjoy our leisure hours to a degree only dimly imagined a half-century ago.

The latest of these conveniences, called Bank-at-Home, promises even more advantages to today's consumer. It's what the futurists have been promising us for years. A new world and a wealth of information is at our finger tips. And what can be more "human" than that?



TONY NESPECA



COME WITH ME TO COLOSSAL CAVE ... WHERE MAGIC ABOUNDS AND TREASURES ARE FOUND. BID YOUR FINGERS FOLLOW YOUR COMMANDS AND I WILL BE YOUR EYES AND HANDS. YET BEWARE THE FIERY DRAGON, FOR HE KNOWS NOT WHETHER YOU ARE WIZARD OR SIMPLE CHARLATAN! HOW BEST TO CONQUER COLOSSAL CAVE? WITH DARING AND SKILL ...

AND AN ADVENTURE GAME MAP, OH CLEVER KNAVE!

Of course, you'll have to supply the brainpower necessary for ADVENTURE success, but we'll provide the graphic inspiration! Our ADVENTURE350 and ADVENTURE751 maps depict the mysterious passages and peculiar inhabitants encountered in the computer fantasy game. ADVENTURE350 map is black-ink-on-white, measures 17″ x 25¼″ and costs $2.95. ADVENTURE751 map depicts this advanced version of the game, is black-ink-on-parchment and measures 23″ x 35″. Cost is $4.98. Prices include postage and handling. To order, send us a message via FEEDBK (main menu item 5, CompuServe user information) stating your name and address, type of poster and how many copies you would like.

CompuServe

5000 Arlington Centre Boulevard
Columbus, Ohio 43220

Actual detail from Adventure350 map.

Q & A

In this column the CompuServe Customer Service Department answers some of the most frequently asked questions about the CompuServe Information Service.

The customer service department is available to answer your questions by dialing the toll-free telephone number, 800-848-8990. The customer service department is open from 8 a.m. to midnight weekdays and from 3 p.m. to midnight weekends EDT.

Question: I live in an area without a CompuServe local access number and must use TYMNET to access your service. What does it take to get a local CompuServe number for my part of the country and when, if ever, do you have one planned?

Answer: Most local CompuServe access numbers go through a piece of data communications equipment called a node. The cost of the node plus other resources required to make a local line possible are substantial.

To justify this investment, CompuServe looks at several factors such as the population of the city, the main type of industry, the microcomputer sales for the area and the potential for commercial or government business in the area.

CompuServe has several locations planned for installation of local dial-up lines this year. We will be announcing them on-line in the What's New column (access main menu item 5, CompuServe User Information or Go NEW-1) as their installation dates near. In addition, we will be testing TELENET service as a possible alternative method of access.

If the TELENET network is added, it will make available local dial-up in some areas of the country not currently serviced by CompuServe or TYMNET.

Question: When CompuServe is displaying information to me, the printout is missing the first few characters on each new line. What can be done to correct this?

Answer: This is a problem that is frequently associated with the use of a hardcopy (uses paper) terminal. To correct the problem enter 5 at the first ! prompt, enter 4 at the next ! prompt, press the ENTER (or RETURN) key at the next prompt, enter 4 at the next prompt and then press the ENTER key at subsequent prompts until you see a line that says "There are 0 character times of delay following a return."

At this point, enter some number (usually 5 - 10 will do it) for the amount of delay you need to allow your printer head to catch up with the output of data. Press ENTER at subsequent prompts until you see DEFALT-42 in the upper right corner of your display. At this point enter 1. If you still miss some characters at the beginning of the line, you may need to increase the amount of carriage return delay.

By the way, the procedure I have described above leads you to a program called DEFALT. This program will allow you to set terminal parameters such as carriage return delays, specify that you are using a videotex compatible machine (either a videotex terminal or a microcomputer running the VIDTEX program), set your entry point at logon to CompuServe for either the DISPLA area (where you see the menus) or the MicroNET Personal Computing area (where you see the OK prompt), set an automatic run of a particular program upon entry to the MicroNET Personal Computing area, and more.

The DEFALT program can be run from the MicroNET Personal Computing area by entering R DEFALT. It can be run from DISPLA by choosing option 4 under main menu item 5, CompuServe User Information.

Tip: You can use the DEFALT program to set automatic entry into the MicroNET Personal Computing area and automatically run a program at logon thus saving you time in getting to a program that you always use first. This can be done with system programs such as SIGS (special interest groups), MQUOTE (MicroQuote) and CB. It can also be done with a program of your own in your disk file area.

When specifying the program to be run at logon, give only the program name when prompted by the DEFALT program. Do not include the command to run it.

by H.K. Gard

The CompuServe Information Service subject index is updated constantly. For the latest list of subjects and services, access main menu item 5, CompuServe User Information, or Go IND-1.

For your convenience you may tear out and keep this printed Subject Index.

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Ask Aunt Nettie

Aunt Nettie, CompuServe's authority on life, love and trivia, can be found under main menu item 3, Entertainment.

Aunt Nettie receives more than 100 letters each week through the CompuServe Information Service from readers in all parts of the country.

Her column, Ask Aunt Nettie, appears each Friday with answers to, well, just about anything you ask.

Here are some selections from Ask Aunt Nettie columns of the past:

Dear Aunt Nettie,
Just wanted to let you know that on May 9, a get-together of CB users was held in Washington, D.C. Those present were: Ms. Rainbo, Farquor, Chrisdos, Mimi, Devil's Daughter, Rabbit, Narcissus, Skywalker, Mr. Rna, Night Owl, and Arsset. Do you know of any other meeting of CB'ers in the past that was this large, or was this the largest to date?
—Chrisdos

Dear Chrisdos,
I have not heard of any other meeting this large. That must have been some party! I have heard of many CB'ers meeting each other, one on one, however, I am sure there have been some other get togethers that I was not aware of. If anyone else knows of any or has participated in one, please let me know.
—Aunt Nettie

Dear Aunt Nettie,
Maybe you can give me a few hints on how to get my wife interested in computers, or at least on how to try her hand at it.
—Mike

Dear Mike,
Why don't you start out by showing her some games on the system, like CB, or even have her read my column and ask me a question? Once she gets into it a little bit, write some programs for her, and pretty soon she should be interested enough to want to learn how to do some of these things herself! Show her that computers aren't so complicated as they seem at first. Once she sees the fun in it, you should have no problem.
—Aunt Nettie

Dear Aunt Nettie,
Please advise this new user of CompuServe how to obtain an index of the menu.
—California Condor

Dear Condor,
From DISPLA, simple enter "Go IND." There is another index in the Personal Computing Area, also. To access that one, enter "R INDEX" from the "OK" prompt. Once you become familiar with the menus, you will have no problem. Happy computing!
—Aunt Nettie

Dear Aunt Nettie,
Do you have a cure for baldness?
—Baldie

Dear Baldie,
Yes. Hair.
—Nettie

Dear Nettie,
I just wanted to say "Howdy" and let you know that you have fans down South, too! Love your column, hun!
—Southerner

Dear Southerner,
Thanks, y'all!
—Nettie

Dear Nettie,
Please help me with a couple of questions. Is it possible to eliminate the "Key ENTER or next page" prompts? Also, how do I go about activating upper and lower case? Any help will be appreciated.
—Bored with Walter in Chicago

Dear Bored,
If you wish to bypass the ENTER prompts, simply type "SCROLL" when you encounter the first one. The rest of what you are reading will type continuously. To activate lower case temporarily, simply type TER LCT OFF. If you want to make this change permanent, select User Information on the main menu, and choose option 4 from the following menu. Hope I have helped you out!
—Aunt Nettie

Now The Washington Post delivers to your home computer.

There's a brand new way to read The Washington Post.

It's an exciting system that links your home computer to each day's news and features through The Post's new "electronic" information service.

You can select from The Post's business and financial reports, editorials and commentary, sports articles, and much more. And you'll even have access to stored information like The Post's Dining Guide, movie reviews, and guides to the new Congress and the Reagan administration.

All information is transmitted via telephone and appears on your computer terminal or television monitor.

So let state-of-the-art technology keep you informed with CompuServe. Just send in the coupon and we'll explain exactly how it works.

Please send me more information.

NAME_____

ADDRESS_____

CITY_____

STATE_____ ZIP_____

Mail to: Beth Loker
The Washington Post
1150 15th Street, N.W.
Washington, D.C. 20071

Introducing your home computer's direct line to The Washington Post.

POST DELIVERS WITH ELECTRONIC EDITION

Each issue of TODAY will feature Information Providers (I.P.s) to the CompuServe Information Service.

Suppose that you have never cared much for your local newspaper. National news coverage is minimal, you say, and you find that you don't share much common ground with its columnists. The business news is woefully inadequate, perhaps, and the only sports coverage that could be called extensive revolves around your winless Hometown Hotshots. You haven't once agreed with the veteran critic's movie reviews, and the only investment advice you read is so much gobbledygook you might as well put your savings on the Daily Double at Saratoga.

You know, however, that the alternative — no newspaper at all — has always been even less desirable. No news may be good news in certain circles, but to a newsaholic it can be fatal, and to a concerned citizen, downright annoying.

But as of February, 1981, another alternative arrived on the scene. The Electronic Washington Post was "delivered" in cities across the country (Access The Electronic Washington under main menu item 1, Newspapers or Go TWP-1).

CompuServe subscribers, by making a local telephone call and using a hookup known as a modem, were able to view the first electronic edition of *The Post* on February 17. And every evening since then, a separate staff of Post editors has sent — via telephone lines — some 60 to 70 news, sports and financial stories from the next morning's paper for viewing that night.

Viewers may also choose from such *Post* offerings as editorials and editorial commentary; Associated Press wire stories; investment, real estate, tax and consumer advice; movie, television, record and book reviews; entertainment guides; and letters to the editor. With the fed-

LUCIAN PERKINS, THE WASHINGTON POST

***Washington Post* staff member Sara Fitzgerald enters stories for the electronic edition.**

eral government a major newsmaker in 1981, CompuServe subscribers can count on *The Post* for information such as guides to Congress and the Reagan administration, plus other federal government news.

have become more accustomed as an organization to dealing with sophisticated technology as basic manufacturing tools and to some extent as internal information resources," she points out, "the newspaper is certainly not a high technology company."

modity to most people."

CompuServe fulfills the present needs of *The Post* in several categories, Ms. Loker says. The information service is targeted to the consumer at home; it was designed as an information and entertainment service rather than a research tool; it offered the opportunity to include advertising copy; and there was a growing customer base among personal computer owners for other CompuServe offerings such as time sharing computing services, games and personal finance services.

"We're involved with CompuServe because we want to see if we can give better service to our readers."

Washington Post Publisher Donald E. Graham stated in a March 2, 1981 *Post* article, "We're involved with CompuServe because we want to see if we can give better service to our readers this way. We want to learn about this and other ways of bringing the news to people."

The Post's involvement is part of a project coordinated by the Associated Press to give its member newspapers experience with electronic publishing. In addition to *The Washington Post*, ten other major regional newspapers — including *The New York Times*, the *Columbus Dispatch*, the *Los Angeles Times*, and the *Norfolk Virginian-Pilot and Ledger Star*—are available electronically on CompuServe's information network.

Publishers, like other information providers on the CompuServe system, are eager to conduct research which will determine what kinds of information home computer users are interested in and what kind of market exists for electronic publishing.

Beth Loker of *The Washington Post* stresses the "need to learn" aspect of the newspaper's involvement with CompuServe. "While we

She continues, "We need to learn about the technology, its potential and its limitations. We also need to learn a great deal more about the marketplace's needs, desires and acceptance of non-traditional information sources and tools. Will the consumer pay more for the convenience of selectivity, time-shifting and variety?" Ms. Loker also stresses the need for publishers to learn "how to present information in new media. How should our editing and presentation change? What unique resources do these media offer that paper and ink do not? What is taken away?"

Ms. Loker explains that the basic considerations which led *The Washington Post* and other newspapers into electronic publishing "relate to our perception of the marketplace." She elaborates by noting, "we serve the home consumer... This consumer market is changing and has been for some time."

She notes the consumer trend toward home-based activities and also the emphasis in recent years on tailoring one's lifestyle to individual taste and convenience. "Time," she points out, "has become an extremely valuable com-

Ms. Loker concludes, "The CompuServe approach was also attractive to us because it is, in fact, interactive and capable of presenting a wide variety of material. This contrasts with other services, both broadcast and cable, which are more limited." CompuServe and its capabilities, then, make for "potential richness" in technological terms for *The Washington Post*.

by Patricia H. Carro

COMPUSERVE IS BH&G'S RECIPE FOR EXPANSION

Database publishing. It's a fairly recent term and a challenging new concept. Briefly, it means the electronic dissemination of information to the booming market of personal computer users. And in the forefront of the database publishing movement is *Better Homes & Gardens (BH&G)* a magazine and book publishing firm based in Des Moines, Iowa.

BH&G, a subsidiary of Meredith Corporation, which also is engaged in printing, radio and television broadcasting, consumer product sales and real estate, is the fourth largest magazine in the U.S. with a circulation of 8 million.

In September 1980, *BH&G* became a part of CompuServe's information service as selected material from the magazine was delivered electronically to CompuServe customers. (Access BH&G under main menu item 7, Home Information, or Go BHG-1). Since then, an ongoing series of reports from *BH&G* food editors, designed to augment each month's issue of *BH&G*, has included such information as nutritional data, cost and calorie information and appliance tips. The previously unpublished material is individually tailored to complement each edition of the magazine.

Far from replacing the actual magazine, the material provided via CompuServe is designed to enhance the print product. Explains Neil Kuehnl, vice president, editor in chief, "Meredith Corporation as a whole, and Better Homes & Gardens in particular, is aware that the cost of distributing physical products is escalating."

CARLA BENDER, MEREDITH CORP.

Neil Kuehnl

At the same time, he observes, "Certain kinds of information are more easily transmitted by electronic means than by print." He notes that certain books and magazines based on ideas for home and family contain a great deal of text and instructional material. The material provided to CompuServe, he says, is information that would normally be excluded from *BH&G* magazine because of space and cost considerations. Also, says Kuehnl, the system allows *BH&G* to provide more selective information, such as caloric or nutritional data, that might not interest the majority of *BH&G* readers but appeals instead to a small segment of the audience.

He stresses that electronic publishing, such as that engaged in by *Better Homes & Gardens* and CompuServe, will not replace the traditional magazine format. (Indeed, the CompuServe material is designed to be viewed with *BH&G* magazine in hand.) Kuehnl uses the example of a scrumptious-looking dessert pictured in full, mouth-watering color on one of *BH&G*'s slick pages. "What really sells," he notes, "is the picture of the finished product. Magazines and books are still the best medium for that."

Kuehnl elaborates his views in a recent issue of *Imprint*, the magazine published by Meredith Corporation. "We are largely a media company," he notes. "As such we are in the information business, not the magazine or book business. Of course we don't want to make some of our major investments obsolete.

But our radio and television stations have not eliminated print journalism, and I don't think software products will either. Given the proper monetary return, the medium shouldn't matter."

In contrast to the pictorial nature of print products, says Kuehnl, "Any kind of long, detailed text information of a reference nature is ideal for electronics." *Better Homes & Gardens* is currently experimenting to see what kinds of editorial material best makes the transition to electronics. Whatever the result of that experimentation, *BH&G* stands to gain a wealth of information about the home computer market. Just as editors have learned how to meet the needs of their magazine and book audiences, they will learn what information the home computer user wants.

Neil Kuehnl points out that electronic publishing has several distinct advantages to traditional print publishing. With electronic publishing, information can be constantly and quickly updated. Not so with traditional publishing; once a magazine is printed it cannot be updated until the next issue. Even then, given production lag times, material is likely to be slightly dated. As a result of the speed capability of CompuServe's information service, such features as cost listings can be continually updated. And because electronic publishing offers the opportunity to tailor material to regional audiences, information — such as *BH&G* gardening tips — can potentially zero in on a target market with more precise and therefore more helpful guidelines.

Kuehnl refers again to the space factor. "There are all kinds of things related to recipes, for instance, that we don't have room for in the magazine. We really don't have the space to tell people how to go into a supermarket and choose a good eggplant." With CompuServe, he says, "It's easy for us to develop a special file of information on smart shopping."

The Meredith Corporation executive calls the CompuServe system "ideal" from several standpoints. "The consumers get to call up information when they need it. Meanwhile, it's stored electronically, which is very inexpensive." Meredith Corporation decided to combine resources with CompuServe, Kuehnl notes, "because CompuServe is clearly the leading consumer-oriented computer data company."

Noting that *BH&G* is in on the "ground floor" of electronic publishing, Kuehnl says he is optimistic about the potential of the CompuServe arrangement. He mentions *BH&G* plans to expand its informational offerings, with more emphasis on regional data as well as family money management and vacation travel features. This expansion will be aided by the recent installation of electronic editing equipment in the *Better Homes & Gardens* editorial offices, which will facilitate transmission of information to CompuServe.

(The CompuServe project is one of two electronics-related ventures in which *BH&G* is currently involved. The other involves Texas Instruments, and has resulted in a solid-state command module called "Weight Control and Nutrition," to be used with the TI 99/4 home computer. Used to plan one person's or an entire family's diet based on individual goals and food preferences, the module — which resembles an eight-track tape — can be purchased in computer outlets around the country.)

Neil Kuehnl is one of those who will be watching the home computer market with close scrutiny in the coming months. Noting that the present audience of home computer users is made up primarily of people who have bought home computers for reasons other than general information, he says, "The challenge in the next year or two will be to broaden the market and build on the present base of users — the computer hobbyist. People will come to see that this service can be also easy to use and immensely valuable to them."

by Patricia H. Carro

"We are largely a media company. As such we are in the information business, not the magazine or book business."

QUBE OFFERS COMPUSERVE USING CABLE

In the beginning, there was the personal computer terminal. Then came interactive cable television. These two new technologies have now joined forces, as three leading communications companies join to pioneer the first truly interactive information retrieval service using two-way cable.

In a project involving CompuServe, Warner Amex Cable Communications Inc. and Atari, a subsidiary of Warner Communications and leader in the video game and home computer industry, subscribers of Warner Amex's two-way interactive cable system —called QUBE—can now retrieve a variety of consumer information from CompuServe's data banks.

QUBE, which began service in 1977 in Columbus, Ohio, is a revolutionary new cable service which allows viewers to "talk back" to their television screens by pushing response buttons on a small console. In addition to the "live" community programming which makes use of the unique interactive feature, QUBE's 30-channel system features consumer information, games and the regular cable fare of movies and television programs.

The new service using CompuServe's information system was launched in January 1981. The first terminal, utilizing an Atari 800 personal computer hooked up to a television set, was installed in Columbus, Ohio's City Hall for municipal use. (Columbus is corporate headquarters for CompuServe in addition to being the first city to receive QUBE.) One of the main objectives of the first installation, QUBE officials say, is to learn first-hand how this new technology can benefit municipal operations in addition to serving business and the general public.

QUBE

Discussing CompuServe on QUBE are (from left) Jeffrey Wilkins, president of CompuServe; Robert Sullivan, senior vice president, Warner Amex New Business Development; John Schmuhl, vice president and general manager, Warner Amex QUBE; Roger Badertscher, president, Atari; and James Fischer, senior vice president, Warner Amex Advanced Engineering and EDP Systems

A limited number of QUBE subscribers were chosen to participate in this initial project following a special interactive program in December on QUBE. They are educated on the use of CompuServe services through special interactive "narrowcast" programming which makes use of QUBE's interactive capabilities. By pushing appropriate response buttons on the QUBE console, subscribers are able to interact with instructors on the more complex retrieval techniques. QUBE subscribers can also exchange ideas and experiences regarding the new service by using the two-way communication system.

That service, says Robert J. Sullivan, vice president of business development for Warner Amex, "represents another major step in the evolution of cable television application." He adds, "We see this as a forerunner to several emerging cable applications, notably in the areas of home shopping, home management and home banking."

By using two-way cable as an information retrieval system, executives of Warner Amex, Atari and CompuServe hope to learn answers to several key questions: How large is the market for an information retrieval service? What type of information and what terminal features will the business person, government official and home consumer find most useful? Officials are also exploring, in this initial stage of the project, appropriate pricing structures for such a service.

QUBE subscribers have access to the full CompuServe data base — news, weather and sports via wire services, home information from *Better Homes & Gardens*, stocks and financial information, personal finance services, entertainment and electronic editions of major daily newspapers such as *The New York Times* and *The Washington Post*. As CompuServe adds new features to its information service, QUBE subscribers will have access to those as well.

by Patricia H. Carro

HEED THE CALL!

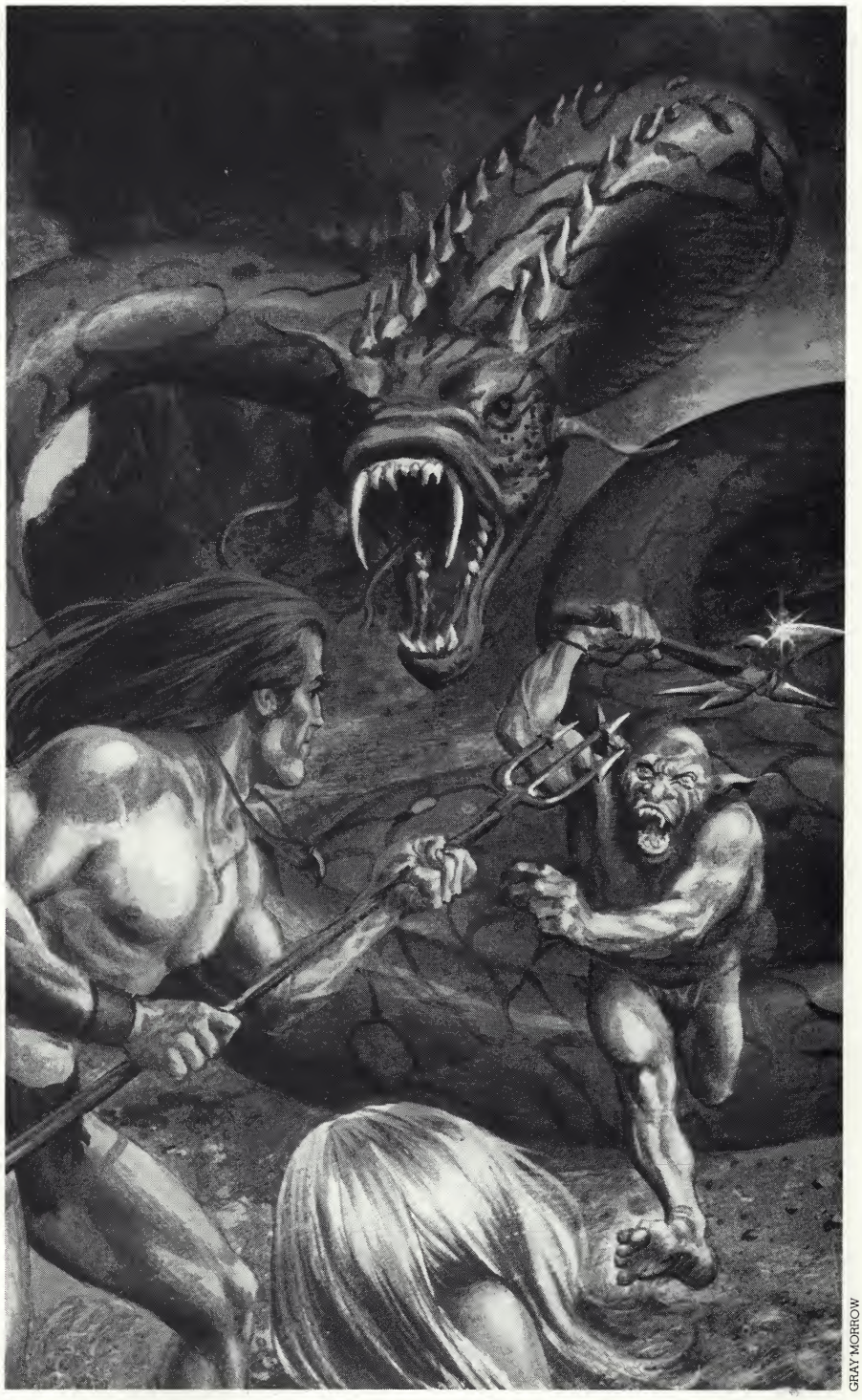
Noble warriors of a distant age! Participate in the first-ever Nationwide Adventure Tournament on the CompuServe Information Service.

Beginning at 6 p.m. local time on Friday, September 4 through 5 a.m. on Tuesday, September 8, slay evil dragons, carry off precious treasures and be proclaimed "Grand Master" of Adventure!

Throughout the Labor Day Weekend, all entrants scoring the point total worthy of "Grand Master" status will be awarded two hours of free time and a CompuServe "Adventure" T-shirt. Runners-up will receive a T-shirt only, but still a prize worthy of the challenge!

Additionally, all entrants can receive on request a full size color version of the poster shown here. We'll charge your account $1 for postage and handling. Check the "What's New" section of Information Service prior to the contest for details and point total requirements.

Many will win the title "Grand Master." Will your name be counted within their ranks?



GRAY MORROW

Detail from poster.

NETWORK LINKS RELIABILITY, PERFORMANCE AND YOU

The CompuServe telecommunications network is expanding almost daily to meet new customer demands or provide better service. To ensure that this expansion is effective as well as rapid, the network is continually evaluated by four basic design criteria: reliability, cost, flexibility and performance.

The primary objective of the network is to allow remote terminals to access CompuServe's computing centers. Reliability, then, is a major design criteria, and its importance can be seen in two major aspects of the network — its structure and its components.

One of the original network structures was what is called a "star formation." There was one long-line circuit connecting each remote CompuStation 11 (communications processors) with CompuServe's Columbus computing centers. This was a very functional, cost-effective design, but since there were no redundant communications paths, its reliability could still be upgraded.

As the network grew, a "ring" or "wagon wheel" network structure was developed to improve reliability. Remote CompuStations were interconnected to each other and the Columbus computing centers so that no major network city was dependent on only one transmission path for communications. Hardware components were selected not only on the basis of price but also on their ability to be maintained.

Clearly, a redundant network structure is more costly to establish and maintain, but it is also much more preferable to a less reliable network. Cost, then, is a design criteria for time sharing networks but should never be the only factor considered.

Network flexibility is also of major importance. The network must be able to expand in an orderly fashion, as well as adapt to meet new requirements and changing objectives.

Performance is certainly not the least concern to be considered when evaluating the network. It is one factor by which CompuServe is judged by all customers, since terminal response time can easily be judged as good or bad. In contrast, the three other primary design elements; reliability, cost and flexibility, are much more intangible.

In fact, some commercial customers require so much faster response times than others that they need singularly dedicated communications paths to ensure little or no network delay.

Using these four yardsticks of effectiveness, CompuServe has formed a telecommunications network that is known industry-wide for speed and reliability.

At the same time, it has expanded at an incredible rate. There are now more than 100 nodes in the CompuServe network, including front end processors.

The future holds even greater networking challenges and possibilities for CompuServe.

CompuServe's Washington D.C. office, center of government marketing efforts, will soon receive a 50kbps transmission path into the Columbus computer centers. It will be the first wideband circuit in the network.

Looking even farther into the future, there one day may be satellite earth stations bearing the name CompuServe. As the volume of data transmissions goes up and the need for international telecommunications increases, transmissions via satellite will become a necessity.

The CompuServe network is undergoing dynamic growth and change. With ever-increasing advances in technology, and continued improvement in reliability, cost control, flexibility and performance, customer benefits will continue to increase.

by Vicki Rutkowski

MODEMS

Some basic bits of information on the kinds of modems and why they're important to you.

"Modems," sometimes referred to as acoustic couplers, are devices that allow data communications over telephone lines. With a modem, you can interface your data terminal or personal computer to a telephone and access the CompuServe Information Service from almost anywhere in the country.

The word modem is derived from the words "modulate" and "demodulate." Digital signals from computers will not pass through the telephone lines. A modem must be able to translate digital signals from computer equipment into audio signals suitable for telephone transmission (modulate), and to retrieve digital signals from the audio signals received from the telephone line (demodulate).

Digital data signals are received by the modem from your terminal or computer in a serial fashion (one bit at a time). The modem translates each bit into one of a pair of tones depending on whether the bit is high (logic 1) or low (logic 0). This is called modulation.

The tones produced by the modem are transmitted over the telephone lines the same way as your voice. At the other end, the tones received by a CompuServe modem are translated back into digital data signals (demodulated) and are accepted by the CompuServe network. The network transmits your data to and from a CompuServe host computer. Data coming from the host computer comes through the network to the CompuServe modem where it gets modulated, transmitted over the telephone to your modem, and demodulated back into a digital signal for your terminal or computer.

Modems differ greatly in features offered. Some modems connect directly to the telephone by wires, while others use an acoustic coupler to get the tones transferred between modem and telephone line. The acoustic coupler requires the telephone handset to be placed into rubber cups containing small speaker and microphone. The"direct connect" modem is generally considered better as it is not sensitive to room noise and usually has stronger signal levels. Modems that can communicate only with answering modems, such as CompuServe uses, are called "originate only." Originate only modems cannot communicate with each other. Units that can communicate with originate only modems, in addition to answering modems, are called "originate/answer"modems. Originate/answer modems must be set to originate mode to communicate with CompuServe and set to answer mode to communicate with originate only modems. An originate only modem is sufficient for use with CompuServe.

Most modem-to-personal-computer hookups use the EIA RS232 interface which is incorporated into almost all modems. Some modems also have a current loop interface for use with terminals such as the Teletype ASR33. Some have only a machine specific interface such as one model of the D.C. Hayes Micromodem which interfaces directly to the Apple II computer.

by Larry Sturtz

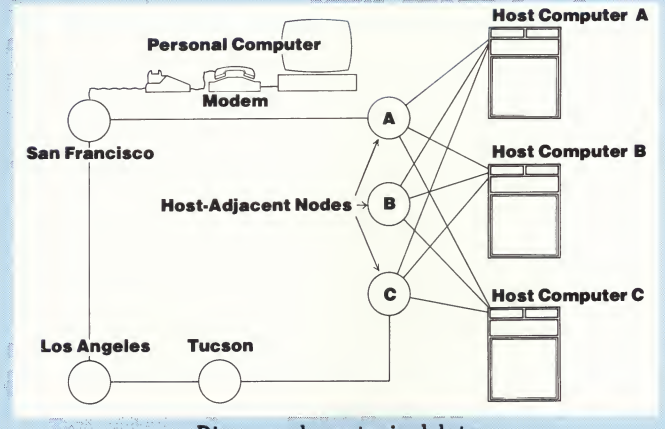


Diagram shows typical data transmission path for a West Coast customer using a personal computer and modem.

TERMINAL PROGRAM

This is a general purpose terminal program written for customers with 8080 or Z80 systems. The port addresses are easily modified to accommodate any I/O hardware. There are no special features in this program except a Hexloader which will download object files created by the cross-assemblers on the CompuServe system. To use the Hexloader, simply request the system program LODHEX (R LODHEX), and the object file that you give to the program will be loaded directly in RAM. This program may be modified for other features most readily by adding to the main terminal loop.

```
TRUE    EQU     OFFFFH                  ; DEFINE TRUE
FALSE   EQU     NOT TRUE                ; DEFINE FALSE

; ************************************************************
; ************************************************************

;       THIS BEGINS THE SECTION THAT MUST BE MODIFIED
;       TO YOUR PARTICULAR SYSTEM.

; ------------------------------------------------------------

;       THESE ARE THE PORT ADDRESSES USED FOR THE MODEM.

MSTAT   EQU     10H             ; MODEM STATUS (CONTROL) PORT
MDATA   EQU     11H             ; MODEM DATA PORT

; ------------------------------------------------------------

;       THESE ARE THE MODEM PORT STATUS FLAG MASKS

MRRDY   EQU     40H             ; MODEM PORT RECEIVER DATA READY FLAG
MTRDY   EQU     80H             ; MODEM PORT TRANSMITTER READY FLAG

; ------------------------------------------------------------

;       THESE ARE THE PORT ADDRESSES USED FOR THE CONSOLE.

CSTAT   EQU     00H             ; CONSOLE STATUS (CONTROL) PORT
CDATA   EQU     01H             ; CONSOLE DATA PORT

; ------------------------------------------------------------

;       THESE ARE THE CONSOLE PORT STATUS FLAG MASKS

CRRDY   EQU     40H             ; CONSOLE PORT RECEIVER READY FLAG
CTRDY   EQU     80H             ; CONSOLE PORT TRANSMITTER READY FLAG

; ------------------------------------------------------------
;       THIS IS SET TO FALSE IF YOUR MODEM PORT READY FLAGS
;       ARE ACTIVE LOW. (ZERO IMPLIES READY), OTHERWISE
;       DO NOT CHANGE IT.

RDYHI   EQU     TRUE            ; TRUE IF UART READY FLAGS ARE
                                ; ACTIVE HIGH (1=READY). FALSE
                                ; IF FLAGS ARE ACTIVE LOW (0=READY).

; ------------------------------------------------------------

;       THIS IS SET TO FALSE IF YOUR MODEM UART DOES NOT NEED
;       INITIALIZATION.  OTHERWISE LEAVE THIS TRUE AND PUT THE
;       PROPER INITIALIZATION SEQUENCE IN PLACE OF THE SEQUENCE
;       LABELED "INIT:".  INIT IS A SUBROUTINE, DO NOT FORGET
;       THE "RET" INSTRUCTION AT THE END OF THE SEQUENCE.

INNEED  EQU     TRUE            ; INITIALIZE UARTS WHEN TRUE

; ------------------------------------------------------------

;       SET THE STACK WHERE YOU WANT

STAK    EQU     1000H           ; STACK TOP

;       SET THE PROGRAM ORIGIN WHERE YOU WANT

        ORG     0100H           ; ORIGIN

;       THIS ENDS THE SECTION THAT MUST BE MODIFIED TO YOUR
;       PARTICULAR SYSTEM UNLESS YOU NEED TO INITIALIZE YOUR
;       MODEM AND/OR CONSOLE UARTS.  IF YOU NEED ANY UARTS
;       INITIALIZED, CHANGE THE SECTION LABELED "INIT:" TO
;       THE PROPER SET OF INSTRUCTIONS FOR YOUR HARDWARE.
;       THE MODEM UART SHOULD BE SET FOR 8 DATA BITS, NO
;       PARITY, AND 1 STOP BIT.

; ************************************************************
; ************************************************************

RDYLO   EQU     NOT RDYHI


;       THESE ARE VALUES NEEDED FOR A CROMEMCO TU-ART I/O
;       CARD FOR INITIALIZATION.  OTHER I/O CARDS MAY USE
;       DIFFERENT VALUES.  SEE YOUR HARDWARE MANUALS.

ABASE   EQU     00H             ; DEVICE A BASE ADDRESS
BBASE   EQU     10H             ; DEVICE B BASE ADDRESS
RESET   EQU     9               ; DEVICE RESET CODE
ACMD    EQU     ABASE+2         ; COMMAND PORT
BCMD    EQU     BBASE+2
                                ; CONSOLE COMMAND BYTE
ABAUD   EQU     88H             ; 1200 BAUD, 8 DATA BITS, 1 STOP BIT
                                ; MODEM COMMAND BYTE
BBAUD   EQU     84H             ; 300 BAUD, 8 DATA BITS, 1 STOP BIT
```

```
ABPORT  EQU     ABASE           ; BAUD PORT
BBPORT  EQU     BBASE
MASK    EQU     0               ; NO INTERRUPTS
AMSK    EQU     ABASE+3         ; MASK PORT
BMSK    EQU     BBASE+3

; ----------------------------------------

;       DEFINE SET CONDITIONS FOR FLAGS

FLGSET  EQU     OFFH            ; FLAG(SET) = OFFH

; ----------------------------------------

        PAGE    START
        LXI     SP,STAK         ; SET STACK
        XRA     A               ; CLEAR FLAGS
        STA     CINFLG          ;
        STA     LINFLG          ;
        STA     ESCFLG          ;
        IF      INNEED
        CALL    INIT            ; INITIALIZE I/O IF NEEDED
        ENDIF

        PAGE    MAIN EXECUTE LOOP
MAIN:   CALL    CONSR           ; CHECK KEYBOARD
        CALL    LINXMT          ; CHECK OUTGOING
        CALL    LINRCV          ; CHECK LINE INCOMING
        LDA     ESCFLG          ; IF ESCAPE RECEIVED-
        CPI     FLGSET          ; THEN
        JNZ     MAIN1           ; POSSIBLE
        CALL    LCHEK           ; OBJECT LOAD SIGNAL
MAIN1:  CALL    CONST           ; SEND TO CRT
        JMP     MAIN            ; DO IT FOREVER
        PAGE    CONSOLE RECEIVER
CONSR:  IN      CSTAT           ; IF
        ANI     CRRDY           ; CONS RCV READY
        IF RDYLO
        RNZ
        ENDIF
        IF RDYHI
        RZ
        ENDIF
        IN      CDATA           ; GET CHAR
CONSR1: STA     LOBUFF          ; BUFFER IT
        MVI     A,FLGSET        ; SET CONSOLE
        STA     CINFLG          ; INPUT FLAG
        RET
        PAGE    LINE TRANSMIT
LINXMT: IN      MSTAT           ; IF
        ANI     MTRDY           ; LINE XMT READY
        IF RDYLO
        RNZ
        ENDIF
        IF RDYHI
        RZ
        ENDIF
        LDA     CINFLG          ; IF CONS HAS SENT
        CPI     FLGSET          ; DATA TO GO OUT
        RNZ                     ; THEN
        LDA     LOBUFF          ; GET CHAR
        OUT     MDATA           ; AND SEND IT OUT
        XRA     A               ; AND RESET FLAG
        STA     CINFLG          ;
        RET                     ;
        PAGE    LINE RECEIVER
LINRCV: IN      MSTAT           ; IF
        ANI     MRRDY           ; LINE RCV READY
        IF RDYLO
        XRI     MRRDY
        ENDIF
        RZ                      ; THEN
        IN      MDATA           ; INPUT CHAR
        STA     LIBUFF          ; BUFFER IT
        ANI     7FH             ; STRIP PARITY
        CPI     1BH             ; IF ESC CHARACTER
        JNZ     LINRC1          ; THEN
        MVI     A,FLGSET        ; SET
        STA     ESCFLG          ; ESCAPE FLAG
        RET                     ; AND RETURN
LINRC1: MVI     A,FLGSET        ; SET LINE INPUT FLAG
        STA     LINFLG          ;
        RET                     ;
        PAGE    CONSOLE TRANSMIT
CONST:  IN      CSTAT           ; IF
        ANI     CTRDY           ; CONS XMT IS READY
        IF RDYLO
        RNZ
        ENDIF
        IF RDYHI
        RZ
        ENDIF
        LDA     LINFLG          ; IF LINE HAS SENT
        CPI     FLGSET          ; DATA
        RNZ                     ; THEN
        LDA     LIBUFF          ; GET LINE CHAR
        OUT     CDATA           ; SEND TO CONSOLE
        XRA     A               ; AND RESET FLAG
        STA     LINFLG
        RET                     ; AND RETURN
        PAGE    LOADER SIGNAL CHECK
LCHEK:  CALL    SIN             ; GET NEXT CHARACTER
        ANI     7FH             ; STRIP IT
        CPI     'L'             ; IF ASCII 'L'
        JNZ     LCHEK1          ; THEN
        CALL    LOAD            ; LOAD OBJECT
        STA     LIBUFF          ; STORE RESPONSE
        CALL    CONSR1          ; SET SOME FLAGS
        CALL    CONST           ; PUT ON SCREEN
LCHEK1: XRA     A               ; CLEAR
        STA     ESCFLG          ; ESCAPE FLAG
        RET                     ; AND RETURN
        PAGE    INPUT ROUTINES FOR LOADER
SIN:    CALL    LINRCV          ; GO TO LINE
        ORA     A               ; LOOP UNTIL
        JZ      SIN             ; CHARACTER IN
        LDA     LIBUFF          ; GET CHARACTER
        RET                     ; AND RETURN

SINX:   CALL    SIN             ; GET CHAR
        CPI     10H             ; IF <DLE>
        JNZ     NOTCTL          ; THEN
        CALL    SIN             ; GET NEXT CHARACTER
        ANI     1FH             ; MAKE IT CONTROL
NOTCTL: MOV     E,A             ; SAVE CHAR
        MOV     A,C             ; GET CHECKSUM
        RLC                     ; SHUFFLE
        ADD     E               ; ADD NEW BYTE
        ACI     0               ; AND CARRY
        MOV     C,A             ; STORE NEW CHECKSUM
        MOV     A,E             ; GET THE CHARACTER
        RET                     ; AND GO BACK
        PAGE    OBJECT LOADER ROUTINE
LOAD:   MVI     C,0             ; INITIALIZE CHECKSUM
        CALL    SINX            ; GET BYTE COUNT
        MOV     B,A             ; PUT IN B
        CALL    SINX            ; GET ADDRESS LOW
        MOV     L,A             ; TO INDEX
        CALL    SINX            ; GET ADDRESS HIGH
        MOV     H,A             ; TO INDEX
LOAD1:  CALL    SINX            ; GET BYTE
        MOV     M,A             ; STORE IT BY INDEX
        INX     H               ; BUMP INDEX
        DCR     B               ; DECREMENT BYTE COUNT
        JNZ     LOAD1           ; GET ALL BYTES
        MOV     D,C             ; MOVE CHECKSUM
        CALL    SINX            ; GET XMITTED CHECKSUM
        CMP     D               ; COMPARE THE TWO
        JNZ     ERROR           ; ERROR IF NOT EQUAL
        MVI     A,'.'           ; POSITIVE RESPONSE
        RET                     ; IN A ON RETURN
ERROR:  MVI     A,'/'           ; NEGATIVE RESPONSE
        RET                     ; IN A ON RETURN
        PAGE    STORAGE
CINFLG  DS      1               ; CONSOLE INPUT FLAG
LINFLG  DS      1               ; LINE INPUT FLAG
LIBUFF  DS      1               ; LINE INPUT BUFFER
LOBUFF  DS      1               ; LINE OUTPUT BUFFER
ESCFLG  DS      1               ; ESCAPE CHARACTER FLAG
        PAGE    UART INITIALIZATION
INIT:   MVI     A,RESET         ; RESET COMMAND
        OUT     ACMD            ; TO BOTH
        OUT     BCMD            ; DEVICES
        MVI     A,MASK          ; SET INTERRUPT
        OUT     AMSK            ; MASKS
        OUT     BMSK            ;
        MVI     A,ABAUD         ; SET BAUD RATES
        OUT     ABPORT          ;
        MVI     A,BBAUD         ;
        OUT     BBPORT          ;
        RET                     ; INIT DONE

        END
```

MARK TURNER AND COMPUSERVE: WINNING COMBINATION

Electronic mail is what allows Mark Turner to run a part-time business that's located miles from his home. Turner, an expert in computers, heads a section of the Western Electric Co. center in Columbus, Ohio, that provides hands-on data processing training for thousands of Bell System employees. Two years ago he was doing a similar job 200 miles away in Indianapolis, Ind., and at the same time was managing a part-time security-devices business with his partner John Patterson and his father. When he was suddenly transferred to Columbus, he didn't want to give up his thriving twelve-year-old firm. So he didn't, and for three months "I had a hell of a time trying to help run my business from 200 miles away," he says. Then, in what he counts a turning point for his business, CompuServe started offering its utility.

"I saw its potential right away. I had my application in as soon as it was announced and I was one of the first to join when it began," Turner says. And the benefits were immediate. With a personal computer located in his home and a less expensive "dumb" computer terminal (without extra memory or extensive processing power) at the business, he has been able to communicate with his partner for the cost of the subscriber fees and the local telephone charges to hook into the CompuServe network. "My partner and I use it for text processing, information storage and retrieval, and preparing confidential plans and bids, and it allows my partner and my dad instant access to anything they need." he says.

Turner was able to sell his "full-blown" Digital Equipment Corp. mini-computer system because the CompuServe utility supplies him with all the computing capabilities he needs for his business. "My computer was not as economical." he says. "First, to send something point to point means one must have computers at both locations. With the network, you only need one processor and two terminals. That's much cheaper. Second, you have to make a long-distance call to link the two distinct computer systems —which must include modems and have the correct, expensive software protocols. There's no way I can call Indianapolis for $5 an hour on the telephone, as I can with CompuServe. Third, both computers must be on-line at the same time — that is, my partner and I must be sitting at our keyboards simultaneously. That's very inconvenient, considering that we have full-time jobs. Fourth, we couldn't take the systems with us when we traveled. But we can use inexpensive portable terminals to connect with CompuServe and communicate quickly anywhere we are."

But the most important benefits have come from both the personal "wear and tear" Turner has saved and his ability to respond instantly to a business opportunity or changed condition. Turner notes: "Right after I had moved, I was driving at night and on weekends back and forth to take care of the business. It was a real grind and it cost me $22 in gas. If I had to stay overnight, that cost me another $50 for a motel and meals. I save all of that with the information utility, and I rarely make unnecessary trips just to keep in touch."

Turner transmits information instantaneously to Patterson, who can retrieve it at his convenience. In the past business letters were sent by mail—and they took a week to go 200 miles. Now Turner or Patterson types the letter on the terminal and places it in a "Read Me" file they created on the utility. Either partner can retrieve the letters within seconds if need be or at any later time, drastically reducing the time spent on routine correspondence.

In fact, their "instant" mail enabled Turner's firm to win an emergency contract for $16,-650. Without the utility, the contract would either have gone by the boards or worn Turner to frazzle, "My partner got a call from a local sheriff at 11:30 P.M. one night. There had been a rape at the local jail and the sheriff wanted a *firm* quote on a new security camera system on his desk at 8 A.M. the next morning." Turner says. "My partner immediately called me, and I went to work preparing the complicated specifications on my terminal. I completed the bid at 3:30 A.M. and went to bed. My partner took the bid off his printer, had it copied the next morning and handed it to the sheriff at 7 A.M., an hour early. We were the low bid and got the contract. The only way I could have gotten the bid to Indianapolis without the utility would have been by driving 200 miles in the dead of night and preparing the bid after I arrived. I don't think I could have done as well under those circumstances."

After Turner burns the midnight oil via CompuServe to win bids, his daughter also uses the utility. She is specializing in journalism at Hilliard High School and uses the network as a text processor for her articles.

Turner's partner also expects

VALENTINE:IMAGE

Mark Turner

extra benefits from electronic mail. In addition to the security business, Patterson owns a catalog-printing firm with clients in Michigan and Canada. He say he spends "a fortune" on mail, yet suffers from delays with the postal service. After using the CompuServe network for more than eighteen months at the security firm, he is planning to install the same type of electronic mail system with terminals for his distant customers. He expects the system not only to speed up his work but also to reduce the number of errors in the catalogs. With a terminal, a customer will be able to see the catalog as it is completed, without the delay of mail delivery.

As Turner and Patterson clearly show, information utilities can give nearly any small-business person the computing and telecommunications power that until recently was available only to giant corporations.

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by Robert L. Perry
a New York-based writer.

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